MATH 302: Elements of Analysis

Spring Semester 2021

Contact Information

Instructor: Dr. Lawrence Mouillé

Email: mouille@rice.edu

Office hours:
Times: TBA
Zoom Meeting ID: 966 4130 3885
Passcode: math302

Course Overview

Course format: Fully online, consisting of live (synchronous) online meetings, online homework, and online assessments. Meetings will be recorded and made available for those who cannot attend.

Subject matter: Introductory treatment of topics in analysis and topology, with the real line as a central example. Techniques include connected and compact sets, sequences and subsequences, continuity, and uniform approximation. Clear, cogent, and complete mathematical arguments are emphasized.

Textbook: Schramm. *Introduction to Real Analysis*. Dover. 2008.

Supplementary Text: Ross. *Elementary Analysis*. 2nd ed. Springer. 2013. *(Do not buy)*

Class Meetings

All live class meetings will be recorded, and recordings will be posted on the course Canvas page.

Live online meeting times (held through Zoom): MWF 2:45 – 3:40 pm Central

Course Zoom Meeting Room Information: **Meeting ID:** 966 4130 3885
Passcode: math302

Workshops: One day each week will be dedicated to synchronous proof-writing workshops (group work). Students will be in groups of 3-4 and will complete activities to improve proof-writing skills. Each week, one group will be selected at random to submit their solutions, which will be used as a key for the rest of the class.

Online Etiquette: The online nature of the class requires us to pay special attention to our behavior. Background noise should be reduced to a minimum. Be sure to mute yourself when you are not speaking in order to reduce background noise. If you have access to a headset, they typically pick up less background noise than microphones integrated in most devices. Arrange a quiet location for yourself while you are in class. Remember that, although you are online, you are still in a classroom and you should dress appropriately. The instructor and other students may be able to see you more clearly than they would in a physical classroom. The instructor reserves the right to record each online lecture, discussion section, and office hour for record-keeping purposes.

Mastery Assessments

For each unit of material covered in class, there will be a corresponding mastery assessment. Each assessment will be available online for an entire week, but once an assessment is opened, it must be completed within 45 minutes. There are two possible grades for each assessment: “pass” or “not there yet”. If you receive “pass” on an assessment for a particular unit, you do not need to take any more assessments for that unit. If you receive “not there yet” on an assessment for a unit, you can try again the following week on a different assessment for the same unit.

Collaboration is prohibited during assessments.

Homework

Students will have weekly homework assignments. There are two possible grades for each assignment: “pass” or “not there yet”. If you receive “not there yet” on an assignment, you can resubmit the assignment, with corrections, the following week. This resubmission process can be repeated until you receive a “pass”.

Grading Procedure

Grades for the course consist of a letter (A, B, C, D, or F) and a modifier (+, -, or no modifier).

The letter for the course grade will be determined by progress on the mastery assessments according to the following correspondence:

- A: earn “pass” on every mastery assessment
- B: earn “pass” on all but one mastery assessment
- C: earn “pass” on all but two mastery assessments
- D: earn “pass” on all but three mastery assessments

The modifier for the course grade will be determined by progress on the homework according to the following correspondence:

- +: earn “pass” on 80% or more of the homework assignments
- -: earn “pass” on 60% or fewer of the homework assignments
- no modifier: if neither of the above conditions apply

Discussion, Questions, & Collaboration

We will use Piazza to discuss material from the course, ask and answer questions, and collaborate on practice problems. If you have any questions related to the course (e.g. topics from lecture, homework, the textbook, etc.), rather than emailing me, I encourage you to post the question on the course Piazza page.

Rice Honor Code

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook at http://honor.rice.edu/honor-system-handbook/. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

Disability Resource Center

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with the Disability Resource Center (Allen Center,

Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

Title IX statement

Sexual Misconduct in Online Course Communities Rice's Sexual Misconduct Policy applies in all Rice online courses. Examples of sexual misconduct behavior in an online environment are text-based or image-based discussion posts of a sexual nature that are offensive or repetitive, unwelcome contact in or outside the course, etc. If you experience sexual misconduct in this course or outside of it, contact your instructor, and/or the Office of Sexual Violence Prevention and Title IX Support via email titleixsupport@rice.edu or call (713) 348-3311.

Statement of Inclusivity

The Dept of Mathematics supports an inclusive learning environment where diversity and individual differences are understood, respected, appreciated, and recognized as a source of strength. At the most basic level, we expect all participants in mathematics courses to treat each other and their instructors with courtesy and respect, and to adhere to the mathematics department standards of collegiality, respect, and sensitivity as well as the Rice Student Code of Conduct. Discrimination, harassment, and bullying will not be tolerated. If you think you have experienced or witnessed unprofessional or antagonistic behavior, then the matter should be brought to the attention of the instructor and/or department chair. The Ombudsperson is also available as an intermediate, informal option, and contacting them will not necessarily trigger a formal inquiry.